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Pier et al.

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(54) **AUTOMATIC RAIL FASTENER ORIENTER**

(71) Applicant: **NORDCO INC.**, Oak Creek, WI (US)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 204 days.

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(22) Filed: **Jan. 8, 2013**

(65) **Prior Publication Data**

US 2014/0190365 A1 Jul. 10, 2014

(51) **Int. Cl.**

B65G 47/14	(2006.01)
B65G 47/16	(2006.01)
B65G 47/22	(2006.01)
B65G 47/24	(2006.01)
E01B 29/24	(2006.01)

(52) **U.S. Cl.**

CPC ***E01B 29/24*** (2013.01)

(58) **Field of Classification Search**

None

See application file for complete search history.

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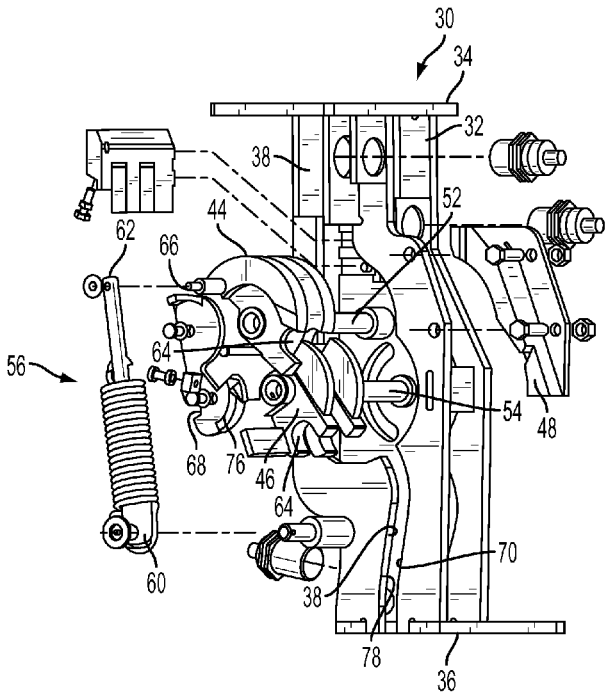
Primary Examiner — Kavel Singh

(74) *Attorney, Agent, or Firm* — Greer, Burns & Crain, Ltd.

(57) **ABSTRACT**

A rail fastener orienter is provided for orienting rail fasteners to a desired orientation, the fasteners having a head, an opposite tip and a shank connecting the head to the tip, and being sequentially provided to the orienter in one of a head right, head left, head up and head down orientation. The orienter includes a frame having an upper end and an opposite lower end, and defining a track with an inlet adjacent the upper end, and an outlet adjacent the lower end, the track dimensioned for slidingly and rotatingly accommodating the shank. At least one stage holder is provided for accommodating the fastener in the track as the head is at least partially engaged by at least one bumper for repositioning to a desired one of the orientations, such that the fastener reaches the outlet in the desired orientation after axial rotation.

17 Claims, 7 Drawing Sheets



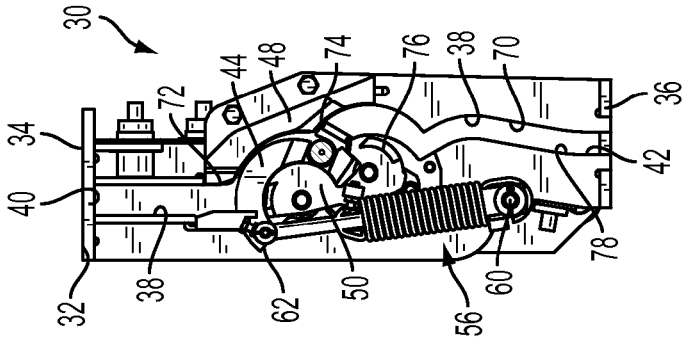


FIG. 2

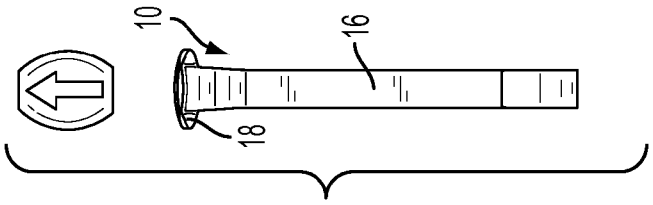


FIG. 1D

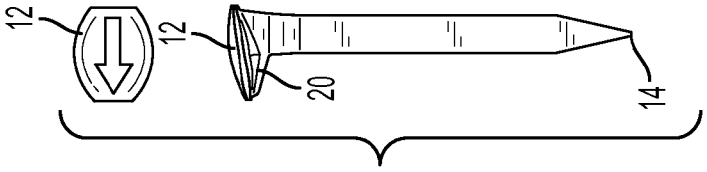


FIG. 1C

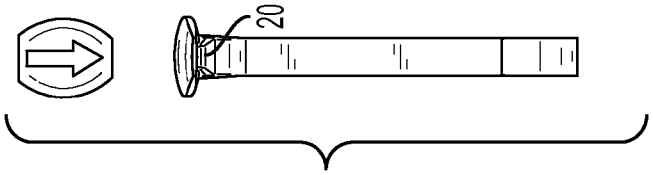


FIG. 1B

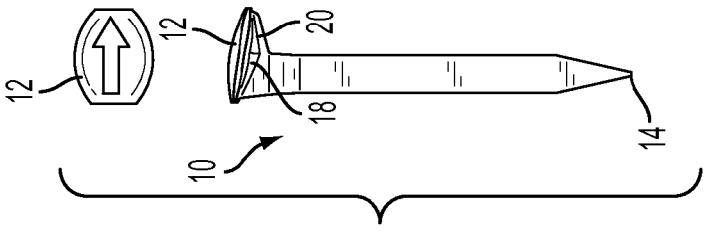


FIG. 1A

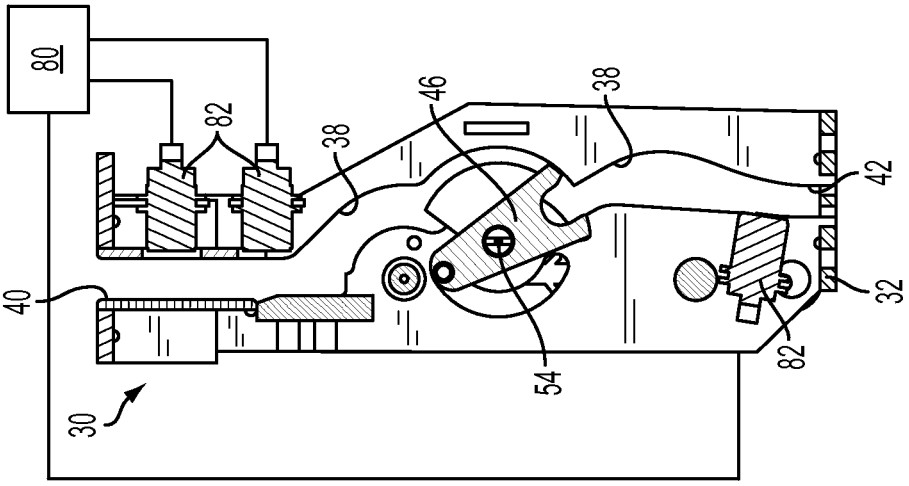

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FIG. 4

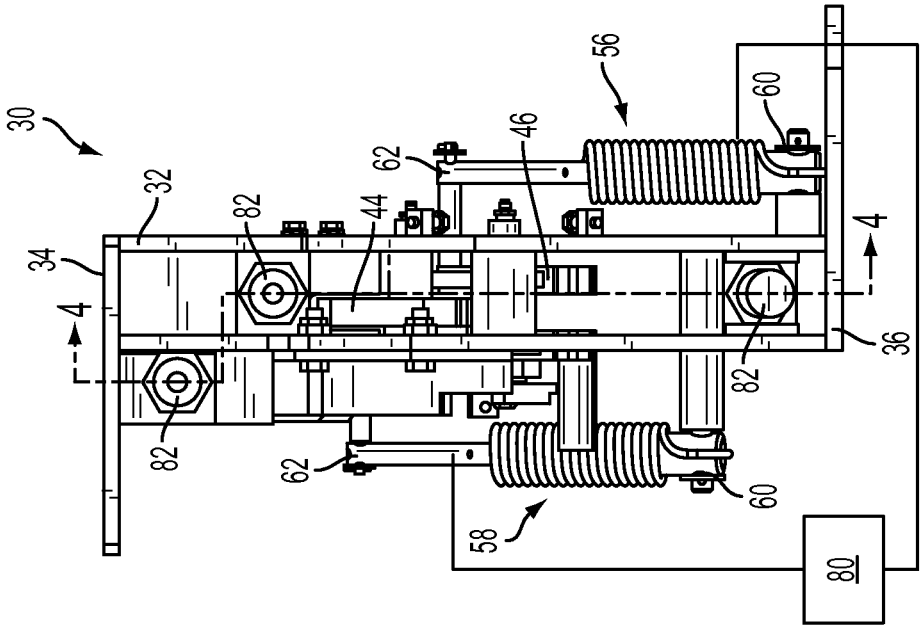
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FIG. 3

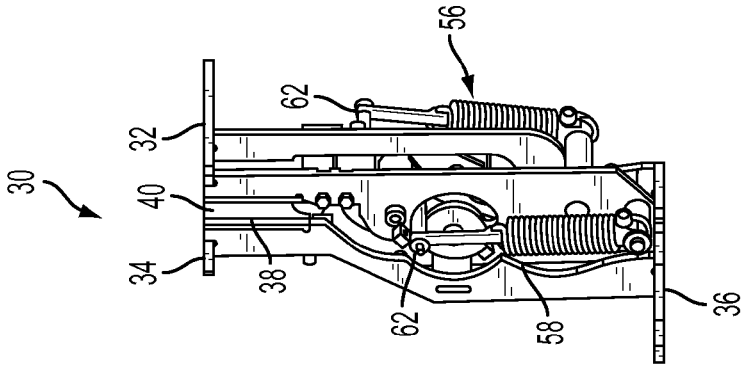


FIG. 7

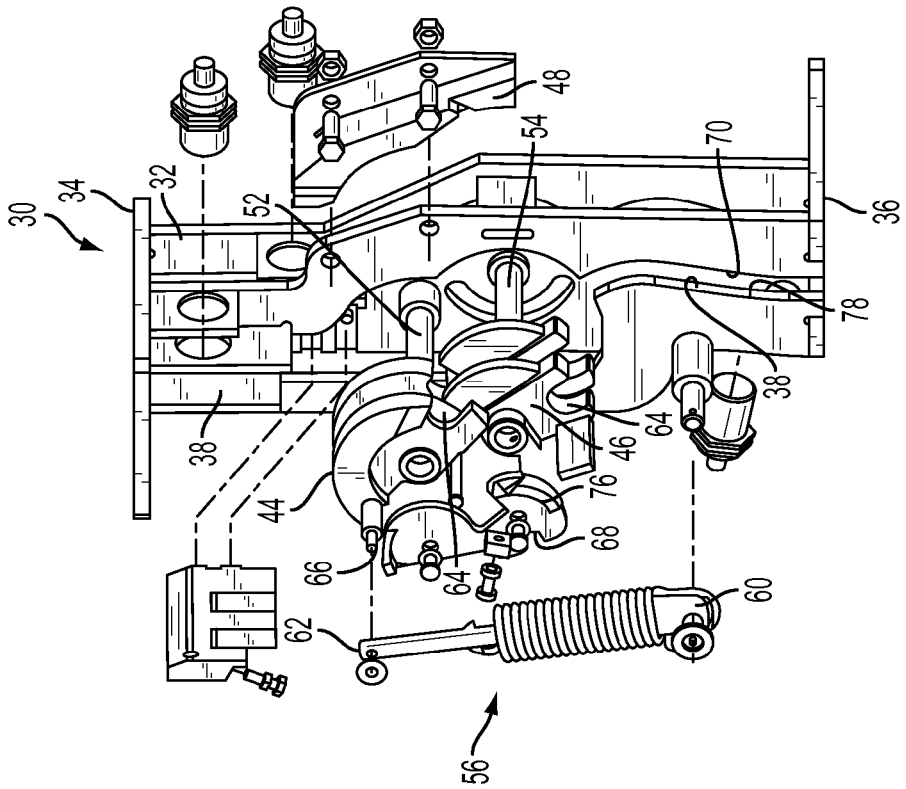


FIG. 6

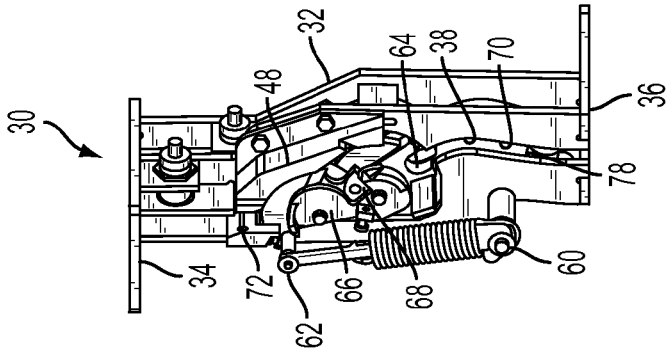


FIG. 5

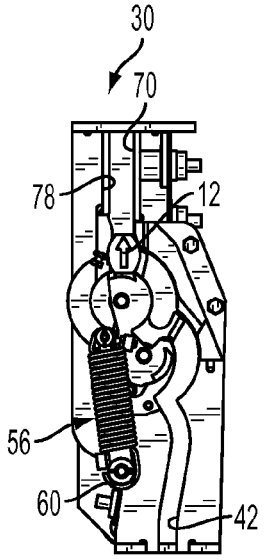


FIG. 8A

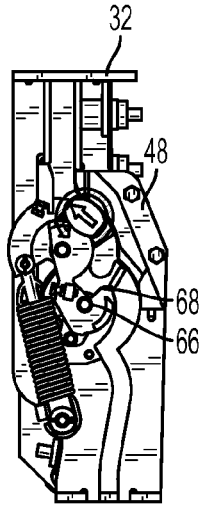


FIG. 8B

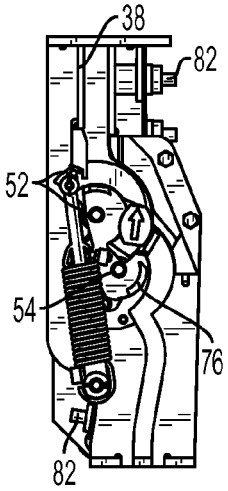
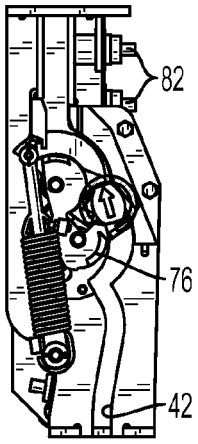


FIG. 8C



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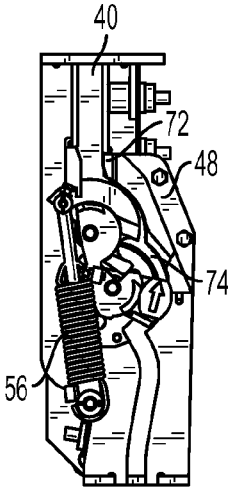


FIG. 8E

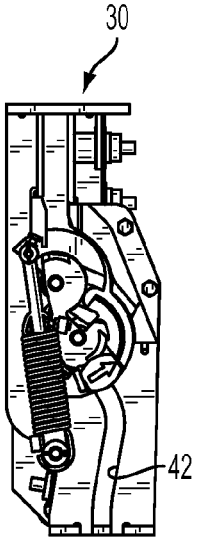


FIG. 8F

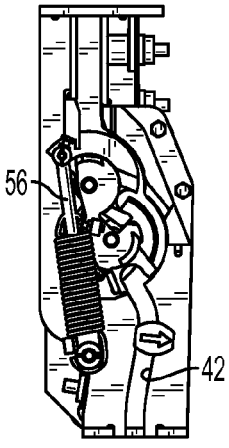


FIG. 8G

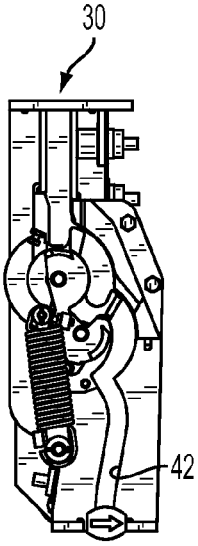


FIG. 8H

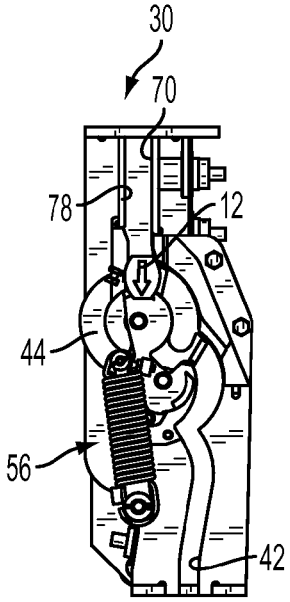


FIG. 9A

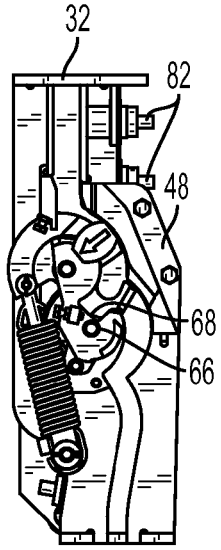
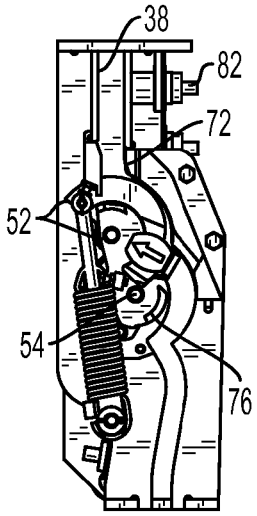


FIG. 9B



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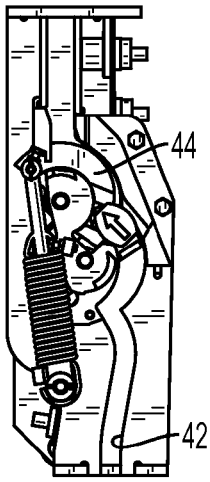

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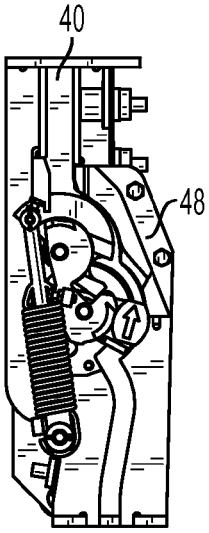

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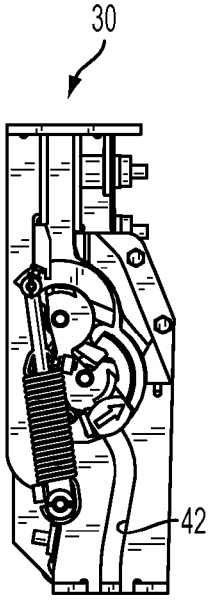
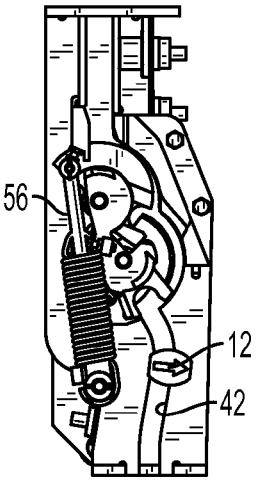


FIG. 9F



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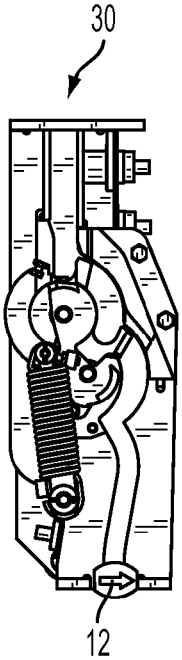


FIG. 9H

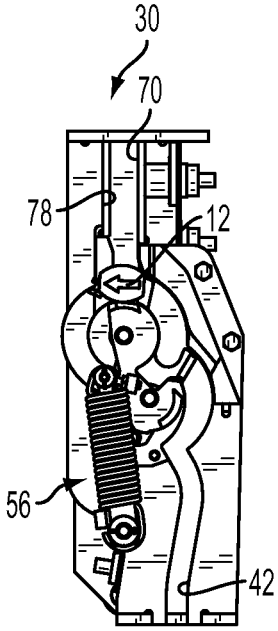


FIG. 10A

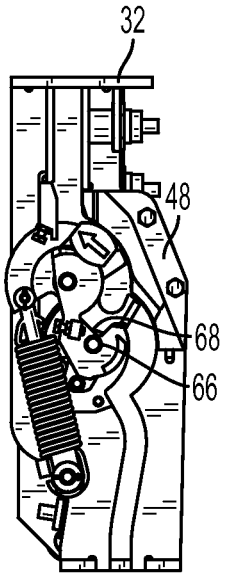
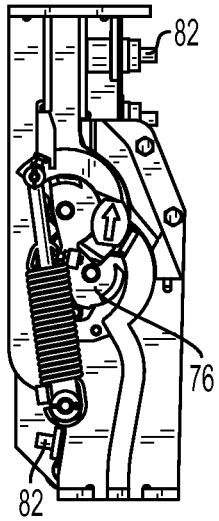


FIG. 10B



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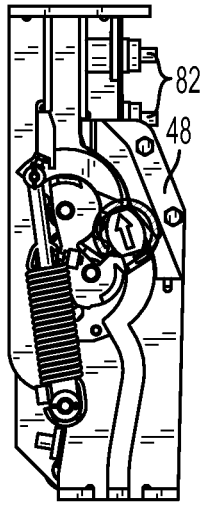


FIG. 10D

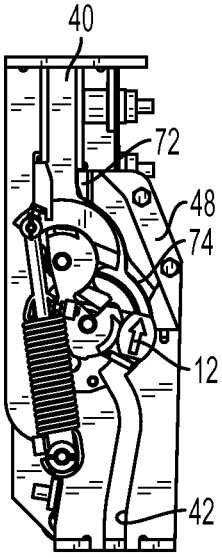
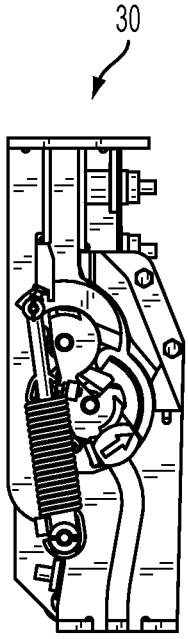


FIG. 10E



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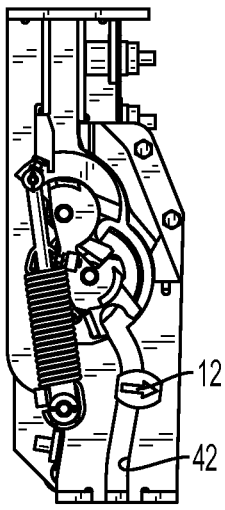

FIG. 10G

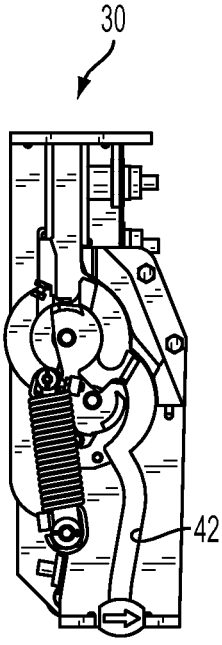

FIG. 10H

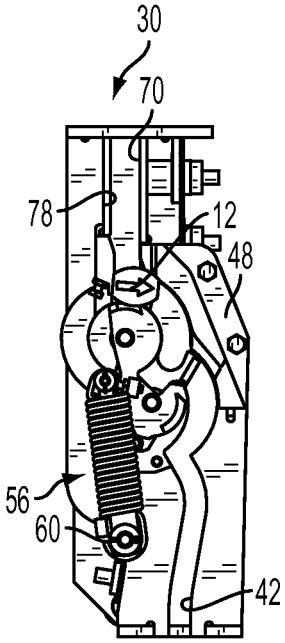

FIG. 11A

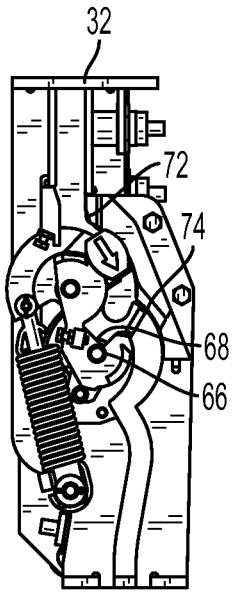

FIG. 11B

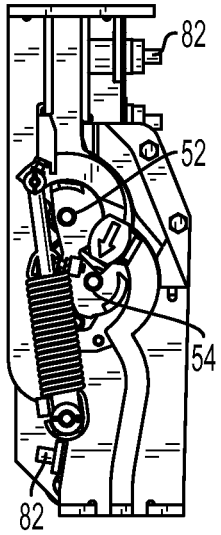

FIG. 11C

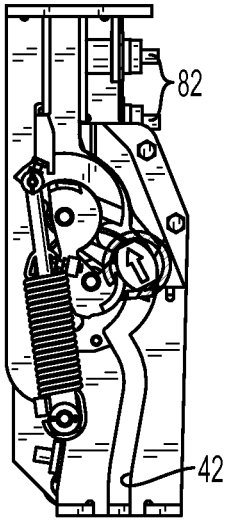

FIG. 11D

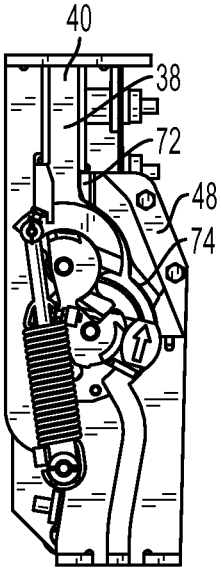

FIG. 11E

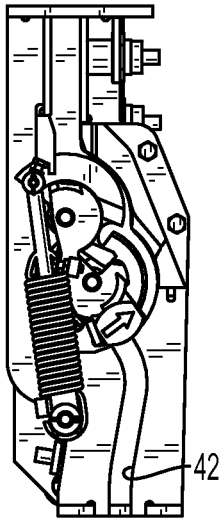

FIG. 11F

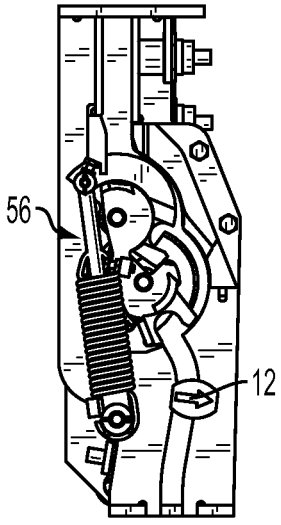

FIG. 11G

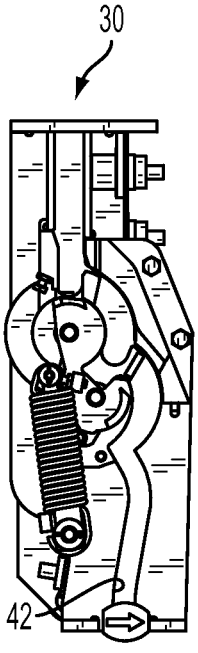

FIG. 11H

AUTOMATIC RAIL FASTENER ORIENTER

RELATED APPLICATION

The present application is related to commonly-assigned, copending U.S. patent application Ser. No. 13/737637, for Automatic Spike Feeder System.

BACKGROUND

The present invention relates generally to material handling equipment, and more specifically to equipment for orienting sorted items, such as rail fasteners including spikes, anchors, clips and other similar articles.

Currently, rail spikes used in a rail maintenance gang are stored in bulk and delivered in relatively small groups to an operator station by a reciprocating ram, as disclosed in commonly-assigned U.S. Pat. No. 7,216,590 which is incorporated by reference. In conventional rail maintenance operations employing the reciprocating ram, a designated operator draws individual spikes from the small group supplied by the ram, manually orients them in proper top-to-bottom and front-to-back position, and inserts them into a feed tray of a rail fastener driver magazine, of the type disclosed in commonly-assigned U.S. Pat. Nos. 5,398,616; 5,465,667 and 7,104,200, all of which are incorporated by reference. Manual loading of such feed trays is a tedious task, which also distracts the attention of the operator who is also controlling the spike driving operation. When two operators are provided, one to load the spike tray and one to control the spike driving mechanism, there is additional labor cost to the railroad for performing the spiking operation.

There is a continuing motivation by railroads to reduce the required labor of rail maintenance operations. Accordingly, maintenance machinery manufacturers have attempted to automate tasks where possible.

SUMMARY

The above-identified need is met by the present rail fastener orienter, in which fasteners are received in one of several orientations, and depending on the orientation, are manipulated for proper orientation in a fastener feeder magazine. In the preferred embodiment, the fasteners are rail spikes having a longitudinal axis and a head with a lip projecting from one side of an upper end of the spike. The present apparatus receives the fasteners in a consistent axially oriented orientation, with the heads at one end and the tip at the opposite end. Fasteners are fed to the present orienter apparatus in one of four positions, head up, head down, head right and head left. Regardless of the incoming spike orientation, the present apparatus is designed to orient the spikes so that the head is consistently oriented in a desired position for delivery to the fastener feeder magazine.

The orienter includes a housing defining a track in which the fastener is fed, and depending on the orientation of the head, is axially rotated using the dimensions of the track and the location of bumpers to result in a desired head orientation. As the fastener travels down the track to an outlet of the orienter, the fastener is placed in the desired orientation.

More specifically, a rail fastener orienter is provided for orienting rail fasteners to a desired orientation, the fasteners having a head and an opposite tip and a shank connecting the head to the tip, and being sequentially provided to the orienter in one of a head right, head left, head up and head down orientation. The orienter includes a frame having an upper end and an opposite lower end, and defining a track with an inlet adjacent the upper end, and an outlet adjacent the lower end, at least a portion of the track dimensioned for slidingly and rotatingly accommodating the shank. At least one stage holder is provided for accommodating the fastener in the track as the head is at least partially engaged by at least one bumper for repositioning to a desired one of the orientations, such that the fastener reaches the outlet in the desired orientation after axial rotation.

In another embodiment, a rail fastener orienter is provided for orienting rail fasteners to a desired orientation, the fasteners having a head and an opposite tip and a shank connecting the head to the tip. The orienter includes a frame having an upper end and an opposite lower end, and defining a track with an inlet adjacent the upper end, and an outlet adjacent the lower end. The track is dimensioned for slidingly and rotatingly accommodating the shank. A first stage holder is configured for pivoting relative to the frame and defines a fastener retaining groove in communication with the track. A first driver is provided for moving the first stage holder from a first position to a second position. A second stage holder is configured for pivoting relative to the frame and defines a second fastener retaining groove in communication with the track.

A second driver is provided for moving the second stage holder from a third position to a fourth position. An outside bumper is located on the frame in operational proximity to the track. A handoff area is in communication with the track and is located between the first stage holder and the second stage holder. An inside bumper is located on the handoff area in operational proximity to the track. A controller is provided for operating the first stage sequentially before the second stage such that a fastener in the track is received by the first stage holder in the fastener retaining groove, and encounters the outside bumper for reorienting the head; as the first stage holder is moved to the second position, the fastener is moved to the handoff area, whereafter the second stage holder receives the fastener in the second groove, and the second stage holder is moved from the third position to the fourth position, and out the outlet.

In still another embodiment, a method is provided for orienting rail fasteners having a shank with an offset head at one end, and a tip at an opposite end. The method includes providing the fasteners to an orienter in an orientation with the head at one end, feeding the fasteners sequentially to an orienter having a track dimensioned for slidingly and rotatably accommodating the fasteners, the fasteners having one of a head left, head right, head up and head down orientation. Next, passing the fasteners to a first stage holder moving between a first position and a second position, where the fastener head encounters an outside bumper when the head is in an undesirable position for rotating the shank so that the head is reoriented. Subsequently, the fastener is passed to a handoff area where the fastener is passed to a second stage holder moving from a third position to a fourth position. At least one inside bumper surface is provided for engaging and reorienting the head when in an undesirable position to a desirable position, and the oriented fastener is then fed from an outlet of the track to a rail fastener applicator.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGS. **1***a-d* depict a conventional rail fastener in each of the four orientations delivered to the present orienter;

FIG. **2** is a front elevation of the present orienter;

FIG. **3** is a side elevation of the present orienter;

FIG. **4** is a cross-section taken along the line **4-4** of FIG. **3** and in the direction generally indicated;

FIG. **5** is a top perspective elevation of the present orienter in a first position;

FIG. **6** is an exploded perspective view of the orienter of FIG. **5**;

FIG. **7** is a bottom perspective elevation of the present orienter in a second position;

FIGS. **8***a-h* are sequential front elevational views of the present orienter positioning a head up fastener;

FIGS. **9***a-h* are sequential front elevational views of the present orienter positioning a head down fastener;

FIGS. **10***a-h* are sequential front elevational views of the present orienter positioning a head left fastener; and

FIGS. **11** a-*h* are sequential front elevational views of the present orienter positioning a head right fastener.

DETAILED DESCRIPTION

Referring to FIGS. **1***a-d*, a rail fastener, generally designated **10** is shown as a cut spike, however other fasteners are considered suitable for use with the present orienter, depending on the application. The fastener **10** has a head **12** and an opposite tip **14**, with a shank **16** connecting the head to the tip. As is known in the art, the shank **16** is quadrilateral in transverse cross-section, and is preferably square. An underside **18** of the head **12** is provided with an angled tang **20** extending between the head and the shank **16**. As seen in FIGS. **1***a-d*, the fastener **10** is sequentially depicted in each of a head right, head down, head left and head up position. These are the orientations of the fastener **10** as provided to the present orienter, generally designated **30** (FIG. **2**), from an upstream rail fastener handling and sorting apparatus (not shown), an example of which is depicted in commonly-assigned U.S. patent application Ser. No. 13/053,523, incorporated by reference herein.

Referring now to FIGS. **2-7**, the present orienter **30** includes a frame **32** preferably oriented at an inclined angle with an upper end **34** located above an opposite lower end **36**, such that fasteners **10** encountering the frame pass by gravity from the upper end to the lower end. While the preferred frame **32** is made of a pair of spaced, parallel plates, other configurations are contemplated depending on the application. A track **38** is defined in the frame **32** and extends from an inlet **40** located adjacent the upper end **34** to an outlet **42** adjacent the lower end **36** and follows a generally non-linear path as the fastener is reoriented, as described below. In addition, it is preferred that the track **38** is dimensioned for accommodating sliding and, in some portions, axial rotation of the shank **16** as it travels from the inlet **40** to the outlet **42**.

Fastener orientation is facilitated in the orienter **30** by at least one and preferably two stage holders **44**, **46**, respectfully referred to as a first stage holder and a second stage holder, which receive the fastener **10** by the shank **16** and control movement of the fastener along the track as the head **12** is reoriented as required by at least one bumper **48**, **76** to a desired one of the above-identified orientations, such that the fastener reaches the outlet **42** in the desired orientation after axial rotation. A handoff area **50** represented by an inside bumper plate **51**, is attached to the frame in a position between and partially overlapping the first and second stage holders **44**, **46** for performing additional fastener orientation as needed, and as described below.

Each of the first and second stage holders **44**, **46** rotates about a respective pivot pin **52**, **54** projecting transversely to the frame **32** and to the track **38**. The first stage holder **44** pivots between a first position and a second position, and the second stage holder pivots between a third position and a fourth position. The pivoting action of each of the holders **44**, **46** is controlled by a corresponding first and second driver **56**, **58**. In the preferred embodiment, the drivers **56**, **58** are fluid powered cylinders with a spring return, however other equivalent devices are contemplated, including but not limited to solenoids, double-acting cylinders, and the like. Each of the drivers **56**, **58** is pivotally connected at a first end **60** to the frame **32** and at a second end **62** to the corresponding holder **44**, **46** so that extension of the drivers will move the holders in the track **38** respectively from the first and third positions, to the second and fourth positions.

Referring now to FIGS. **5-7**, each of the first and second stage holders **44**, **46** is provided with a generally "U"-shaped groove **64** that rotatably accommodates the fastener **10** as it is moved along the track **38**. Also, the inside bumper plate **51** defines a transfer recess **68** is mounted to the frame **32** so that the transfer recess between the first and second holders.

Referring now to FIGS. **2**, **5** and **6**, the present orienter **30** includes an outside bumper **48** located on the frame **32** in operational proximity to the track and associated with the first stage holder **44**. Preferably, the outside bumper **48** is generally arcuate and abuts an outer edge **70** of the track **38**. A ramped leading surface **72** of the bumper **48** is located near the inlet of the track **38**. A second ramped surface **74** of the bumper **48** is located adjacent and on an opposite side of the track **38** from the transfer recess **68**. Otherwise, the bumper **48** extends from a surface of the frame **32** a sufficient height to slidingly engage a peripheral edge of the fastener head **12**.

Referring now to FIGS. **2** and **6**, an inside bumper **76** is also generally arcuate in shape and is located on the inside bumper plate **51** in operational proximity to the track **38**, preferably along an inner edge **78** and being operatively associated with the second stage holder **46**. As explained in greater detail below, the inside bumper **76** is constructed and arranged for engaging the tang **20** of the fastener **10** for reorientation purposes as needed.

Referring now to FIGS. **3** and **4**, a controller, generally schematically indicated and designated **80**, is provided to the orienter **30** and is a computer, programmable chip, CPU or the like as is well known in the art, and among other control functions, operates hydraulic valves (not shown) connected to the drivers **56**, and **58** for selective operation as is known in the art. The controller **80** is configured for operating the first stage holder **44** sequentially before the second stage holder such that a fastener **10** in the track **38** is received by the first stage holder and encounters the bumper **48** for reorienting the head **12** as needed. Also, as the first stage holder **44** is moved to the second position, the fastener **10** is moved to the handoff area **50**, whereafter the second stage holder **46** receives the fastener. The second stage holder **46** is then moved from the third position to the fourth position, and ultimately out the outlet **42**. Also in FIG. **3**, it should be noted that the first and second drivers **56**, **58** are located on opposite sides of the frame **32**.

At least one sensor **82**, such as an opto or magnetic sensor or a proximity switch, as is well known in the art, is located in operational proximity to the track **38** for monitoring the action of the orienter **30** as well as upstream fastener handling equipment. In the preferred embodiment, the sensors **82**, connected to the controller **80**, monitor the number of fasteners **10** in the track **38** and also trigger the operation of the drivers **56**, **58**.

Referring now to FIG. **2**, the second stage holder **46** optionally includes a fastener head support **84**, which stabilizes the fastener head **12** during travel in a lower second of the track **38** while under the control of the second stage holder. It has been found that the support **84** engages a flat spot on the shank **16**

near the underside **18** of the head **12** in a way that prevents unwanted movement of the fastener **10** in the track **38**.

Referring now to FIGS. **8***a*-**8***h*, operation of the present orienter **30** will be described when the fastener head **12** is in the up oriented position. In FIG. **8***a*, the fastener **10** is seen entering the track **38**, and has nested in the groove **64** in the first stage holder **44**, which is in the first position. In FIG. **8***b*, the first driver **56** begins to extend, moving the fastener **10** towards the handoff area **50**. However, as the fastener **10** reaches the outside bumper **48**, the head **12**, and specifically the tang **20** is engaged by the bumper. Thus, the movement of the fastener **10** down the track **38** by the first driver **56** causes the head **12** to rotate counter-clockwise, so that the fastener head has rotated approximately 90 degrees compared to its initial position.

Next, in FIG. **8***c*, the first driver **56** is fully extended, the first stage holder **44** is in the second position, and the fastener **10** is inserted in the inside bumper plate **51**, specifically in the transfer recess **68**. In this same position, the fastener is accommodated in the groove **64** in the second stage holder **46**. During this phase, the fastener **12** does not rotate relative to the track **38**, but instead follows the track in the orientation resulting from the rotation described above in FIG. **8***b*. In FIG. **8***d*, the second driver **58** begins to extend, carrying the fastener **10** from the inside bumper plate **51**. At this time, the fastener head **12** engages the second ramped surface **74** on the outside bumper **48**, and the head **12**, and of course the fastener **10** is again rotated counterclockwise to place the head in the heads up position.

Referring now to FIG. **8***e*, the second driver **58** continues its extension, carrying the fastener **10** down the track **38**. In FIG. **8***f*, at the limit of the extension of the second driver **58**, due to the curvature of the track **38** at that point, the fastener **10** is now positioned to enter the track outlet **42** in the desired head right orientation, which it retains as the fastener **10** travels to the outlet, seen in FIGS. **8***g*-**8***h*. It will be noted that the outlet portion **42** of the track **38** has a narrower dimension to permit sliding action of the fastener shank **16**, but not axial rotation which might change the desired orientation.

Referring now to FIGS. **9***a*-**9***h*, operation of the present orienter **30** will be described when the fastener head **12** is in the down oriented position. In FIG. **9***a*, the fastener **10** enters the track **38**, and is accommodated in the groove **64** of the first stage holder **44**. In FIG. **9***b*, since the tang **20** faces the inner edge **74** of the track **38**, it fails to engage the outside bumper **48**. As such, the fastener retains its head orientation as the first driver **56** reaches full extension. In FIG. **9***c*, the fastener **10** reaches the inside bumper plate **51** and is engaged in the transfer recess **68**. In FIG. **9***d*, as the second stage holder **46** carries the fastener **10** down the track, the fastener has a head up orientation, which it retains as the second driver **58** fully extends, and the head **12** also fails to engage the outside bumper **48** or the inside bumper **76**, since the tang **20** is facing up, as seen in FIG. **9***d*. Referring now to FIG. **9***e*, as the second driver **58** extends, the head **12** retains its position.

Referring to FIG. **9***f*, at the end of the travel of the second driver **58**, the fastener **10** reaches the outlet **42** in the desired head right orientation, which it retains as the fastener exits the orienter as seen in FIGS. **9***g*-**9***h*.

Referring now to FIGS. **10***a*-**10***h*, operation of the present orienter **30** will be described when the fastener head **12** is in the head left oriented position. In FIG. **10***a*, the fastener **10** has entered the track **38**, and is accommodated by the groove **64** in the first stage holder **44**. Next, in FIG. **10***b*, as the first driver **56** extends, due to the left facing orientation of the tang **20**, the outside bumper **48** is not engaged, and the fastener **10** retains its orientation through the extension of the first driver. In FIG. **10***c*, the fastener enters the transfer recess **68** in the head up orientation.

Referring now to FIG. **10***d*, as the second stage holder **46** engages the fastener **10**, since the tang **20** faces the outside bumper **48**, the engagement of the tang **20** upon the second ramped surface **74** causes the fastener **10** to rotate counter clockwise, so that the fastener is in the head up orientation. This is the only orientation in which the fastener **10** is manipulated by the ramped leading surface **72** of the outside bumper.

In FIG. **10***e*, the fastener **10** retains a head up orientation from the previous rotation described in FIG. **10***d* as the second driver **58** fully extends, and follows the track **38**. In FIG. **10***f*, as the second driver **58** reaches the end of its extension, and the fastener **10** reaches the outlet **42**, the fastener is in the desired head right orientation, which it retains as the fastener exits the orienter **30**, as seen in FIGS. **10***g*-**10***h*.

Referring now to FIGS. **11***a*-**11***h*, the operation of the present orienter **30** will be described when the fastener head **12** is in the head right oriented position. In FIG. **11***a*, the fastener **10** is in the track **38**, and is engaged in the groove **64** of the first stage holder **44** while in the head right orientation. In FIG. **11***b*, since the tang **20** is facing right, the outside bumper **48** is not engaged, and as the first driver **56** extends, the fastener **10** retains the head orientation until it is engaged in the transfer recess **68** in the inside bumper plate **51**, as seen in FIG. **11***c*.

Referring now to FIG. **11***d*, the fastener **10** is engaged in the groove **64** in the second stage holder **46**, and due to the inside facing position of the tang **20**, the inside bumper **76** is engaged, causing the fastener to rotate clockwise to the head up position, which it retains as the second driver **58** extends, as seen in FIG. **11***e*. As seen in FIG. **11***f*, as the fastener **10** is deposited at the beginning of the outlet **42** by full extension of the second driver **58**, the fastener retains the desired head right orientation, which it retains as the fastener exits the orienter **30**, as seen in FIGS. **11***g*-**11***h*.

Thus, it will be seen that the present orienter **30** is designed to accept a rail fastener **10** in any one of a head up, head down, head right and head left orientations, and without user input, automatically reorients the fastener to the desired head right orientation, which is useful for downstream transfer of the fasteners **10** to a fastener driving apparatus, as described in U.S. Pat. Nos. 5,398,616; 5,465,667 and 7,104,200, incorporated by reference.

While a particular embodiment of the present automatic rail fastener orienter has been shown and described, it will be appreciated by those skilled in the art that changes and modifications may be made thereto without departing from the invention in its broader aspects and as set forth in the following claims.

What is claimed:

1. A rail fastener orienter for orienting rail fasteners to a desired orientation, the fasteners having a head, an opposite tip and a shank connecting the head to the tip, and being sequentially provided to said orienter in one of a head right, head left, head up and head down orientation of the head, said orienter comprising:

a frame having an upper end and an opposite lower end, and defining a track with an inlet adjacent said upper end, and an outlet adjacent said lower end, said track dimensioned for slidingly and rotatingly accommodating the shank, the shank having a longitudinal axis that is transverse to a direction of travel of each spike through said passageway;

at least one stage holder for accommodating the fastener in said track as the head is at least partially engaged by at least one bumper for repositioning to a desired one of said orientations of the head, such that the fastener reaches said outlet in the desired orientation of the head after axial rotation of the shaft.

2. The rail fastener orienter of claim **1**, wherein said at least one stage holder includes a first stage holder for moving the fastener along said track from a first position and a second position where the fastener is delivered to a handoff area, and a second stage holder for moving the fastener from a third position to a fourth position.

3. The rail fastener orienter of claim **2**, further including a first driver for moving said first stage holder from said first position to said second position, and a second driver for moving said second stage holder from a third position to a fourth position.

4. The rail fastener orienter of claim **1** further including an outside bumper located on said frame in operational proximity to said track and being associated with a first stage holder, a handoff area in communication with said track and located between said first stage holder and a second stage holder, and an inside bumper located on said frame in operational proximity to said track and being associated with said second stage holder.

5. The rail fastener orienter of claim **2** further including a controller for operating said first stage holder sequentially before said second stage holder such that a fastener in said track is received by said first stage holder and encounters a first stage bumper for reorienting the head, and as said first stage holder is moved to said second position, the fastener is moved to a handoff area, whereafter said second stage holder receives the fastener, and said second stage holder is moved from said third position to said fourth position, and out said outlet.

6. A rail fastener orienter for orienting rail fasteners to a desired orientation, the fasteners having a head and an opposite tip and a shank connecting the head to the tip, said orienter comprising:

a frame having an upper end and an opposite lower end, and defining a track with an inlet adjacent said upper end, and an outlet adjacent said lower end, said track dimensioned for slidingly and rotatingly accommodating the shank;

a first stage holder configured for pivoting relative to said frame and defining a fastener retaining groove in communication with said track;

a first driver for moving said first stage holder from a first position to a second position;

a second stage holder configured for pivoting relative to said frame and defining a second fastener retaining groove in communication with said track;

a second driver for moving said second stage holder from a third position to a fourth position;

an outside bumper located on said frame in operational proximity to said track;

a handoff area in communication with said track and located between said first stage holder and said second stage holder;

an inside bumper located on an inside bumper plate defining said handoff device in operational proximity to said track;

a controller for operating said first stage sequentially before said second stage such that a fastener in said track is received by said first stage holder in said fastener retaining groove, and encounters said outside bumper for reorienting the head; as said first stage holder is moved to said second position, the fastener is moved to said handoff device, whereafter said second stage holder receives the fastener in said second groove, and said second stage holder is moved from said third position to said fourth position, and out said outlet.

7. The rail fastener orienter of claim **6** wherein said first driver is connected at one end to said frame, and at an opposite end to said first stage holder.

8. The rail fastener orienter of claim **6** wherein each of said first and second drivers is a fluid powered cylinder with a spring return.

9. The rail fastener orienter of claim **6** wherein said first driver is disposed on a first side of said frame and said second driver is disposed on an opposite side of said frame.

10. The rail fastener orienter of claim **6** wherein said outside bumper engages only fasteners where the head is positioned in a head up position in said track.

11. The rail fastener orienter of claim **6** wherein said inside bumper engages only fasteners where the head is positioned in a head down orientation when engaged in the handoff area.

12. The rail fastener orienter of claim **6** further including at least one sensor associated with said frame and in operational proximity to said track for sensing fasteners in said track and sending signals to said controller.

13. The rail fastener orienter of claim **6** wherein said second driver is connected at one end to said frame, and at an opposite end to said second stage holder.

14. The rail fastener orienter of claim **6** wherein said inside bumper is constructed and arranged for engaging and rotating a tang of the fastener as the fastener in a head down position is moved from said holding device to said outlet.

15. The rail fastener orienter of claim **6** wherein said outside bumper has a first portion engaging a tang of the fastener when the fastener is in the first stage holder, and a second portion constructed and arranged for engaging the tang when the fastener is in the second stage holder.

16. The rail fastener orienter of claim **6** wherein said second stage holder has a fastener head support configured for engaging the spike head.

17. A method for orienting rail fasteners having a shank with an offset head at one end, and a tip at an opposite end, comprising:

providing the fasteners to an orienter in an orientation with the head at one end;

feeding the fasteners sequentially to an orienter having a track dimensioned for slidingly and rotatably accommodating the fasteners, the fasteners having one of a head left, head right, head up and head down orientation;

passing the fasteners to a first stage holder moving between a first position and a second position, where the fastener head encounters an outside bumper when the head is in an undesirable position for rotating the shank so that the head is reoriented;

passing the fastener to a handoff area where the fastener is passed to a second stage holder moving from a third position to a fourth position;

providing at least one inside bumper surface for engaging and reorienting the head when in an undesirable position to a desirable position; and

feeding the oriented fastener from an outlet of the track to a rail fastener applicator.

* * * * *